FIG. 1

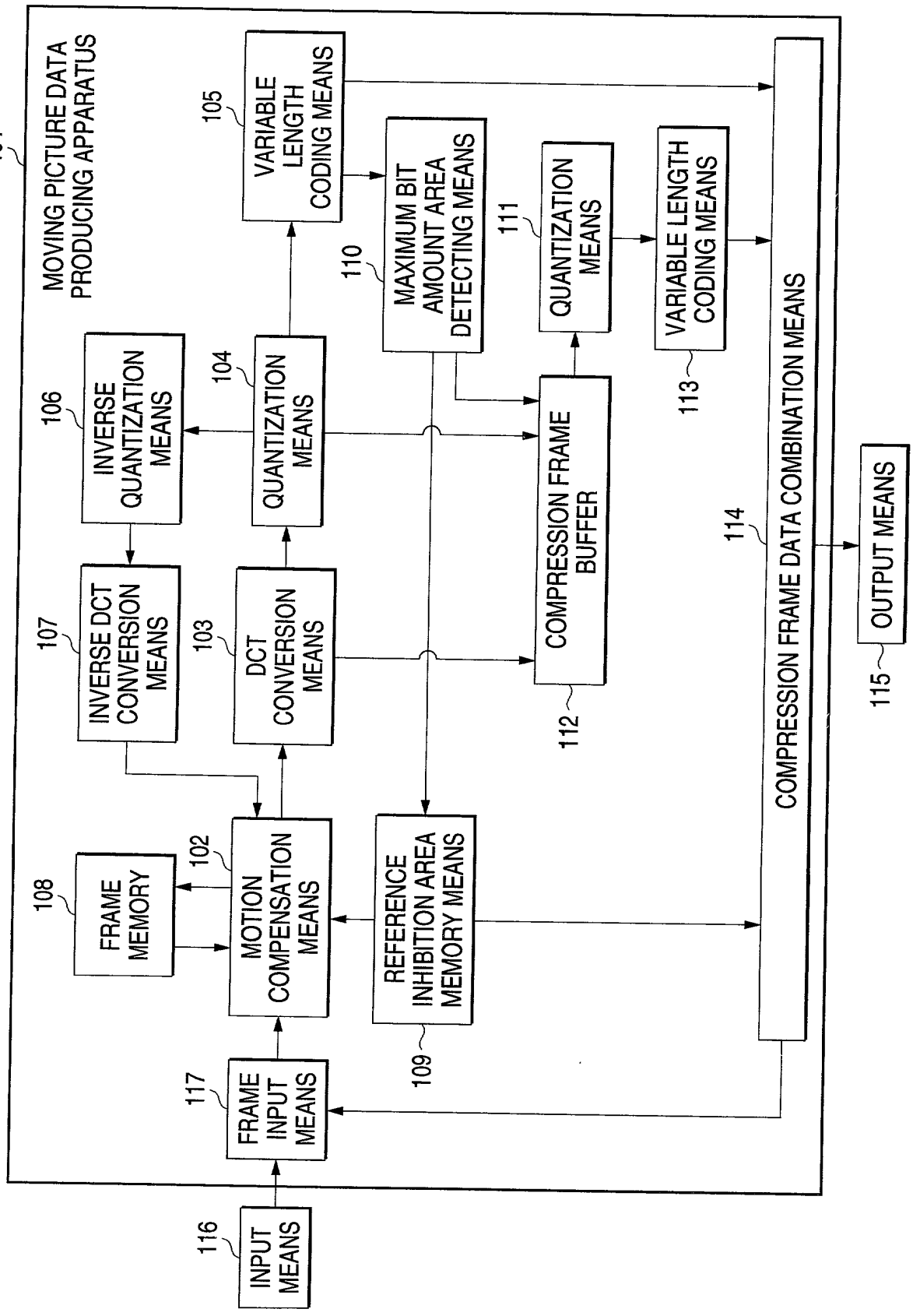

101
MOVING PICTURE DATA PRODUCING APPARATUS
105
VARIABLE LENGTH CODING MEANS
110
MAXIMUM BIT AMOUNT AREA DETECTING MEANS
111
QUANTIZATION MEANS
113
VARIABLE LENGTH CODING MEANS
106
INVERSE QUANTIZATION MEANS
104
QUANTIZATION MEANS
COMPRESSION FRAME BUFFER
112
107
INVERSE DCT CONVERSION MEANS
103
DCT CONVERSION MEANS
114
COMPRESSION FRAME DATA COMBINATION MEANS
115
OUTPUT MEANS
108
FRAME MEMORY
102
MOTION COMPENSATION MEANS
REFERENCE INHIBITION AREA MEMORY MEANS
109
117
FRAME INPUT MEANS
116
INPUT MEANS

FIG. 2

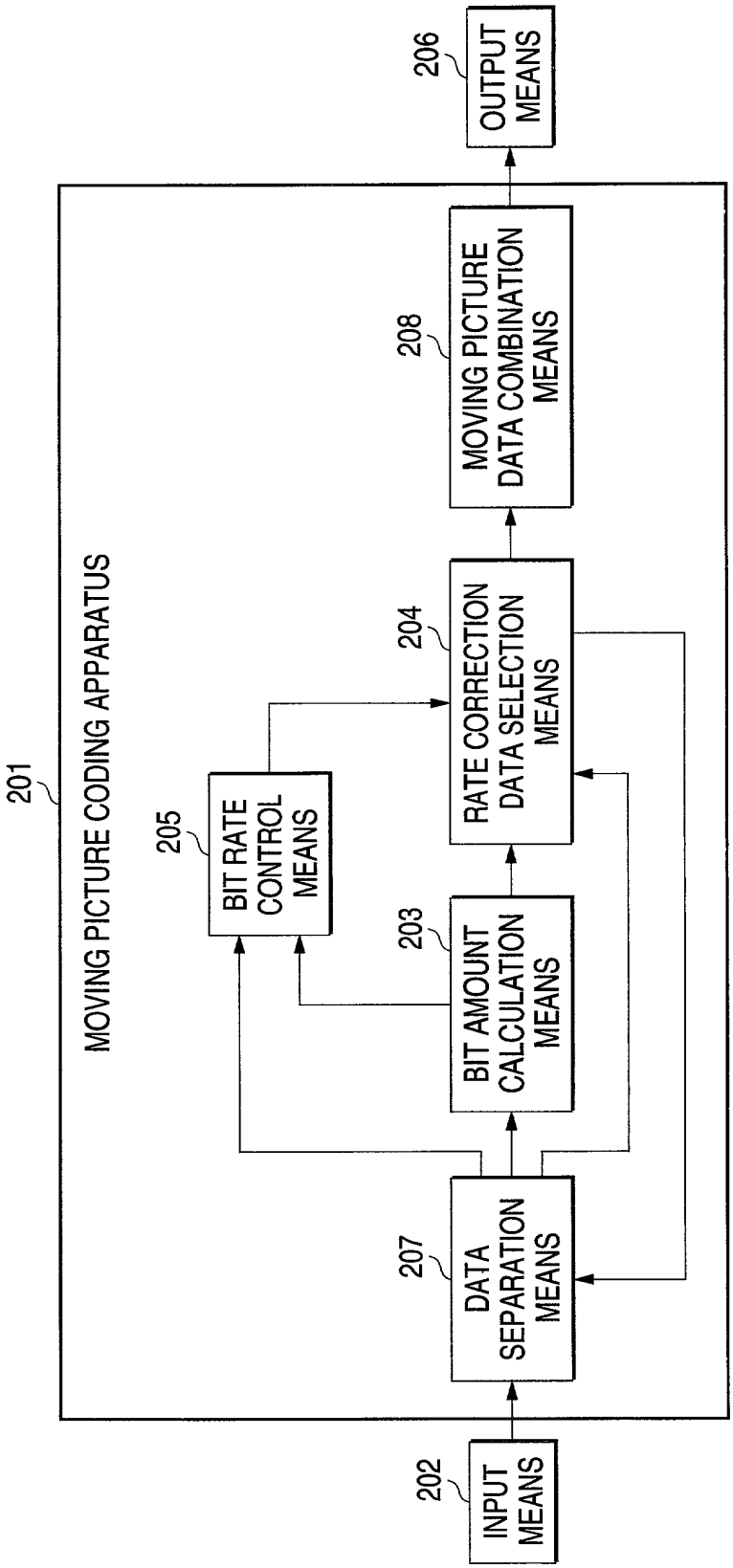
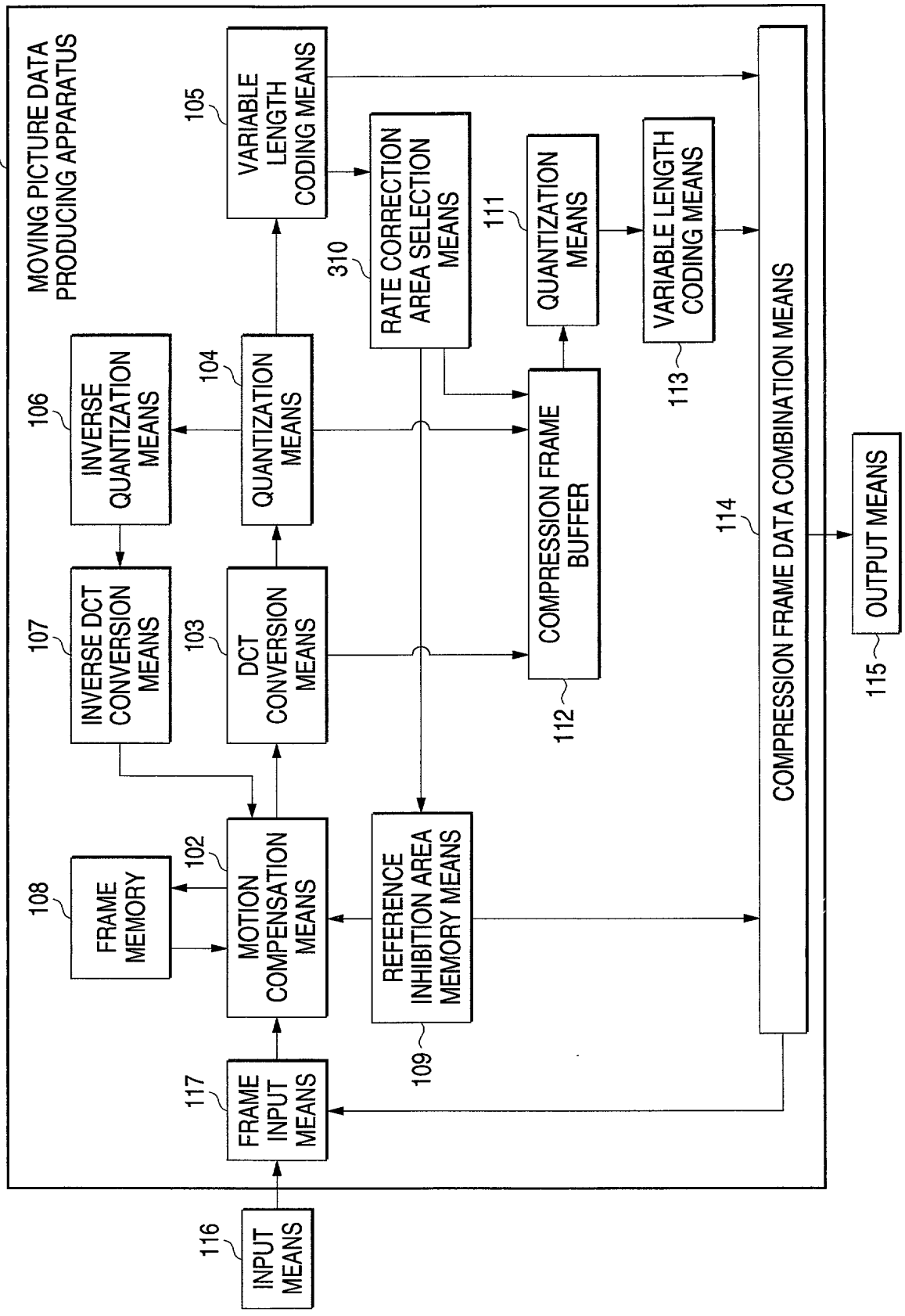

201
MOVING PICTURE CODING APPARATUS
202
INPUT MEANS
207
DATA SEPARATION MEANS
203
BIT AMOUNT CALCULATION MEANS
205
BIT RATE CONTROL MEANS
204
RATE CORRECTION DATA SELECTION MEANS
208
MOVING PICTURE DATA COMBINATION MEANS
206
OUTPUT MEANS

FIG. 3


301
MOVING PICTURE DATA PRODUCING APPARATUS
105
VARIABLE LENGTH CODING MEANS
310
RATE CORRECTION AREA SELECTION MEANS
111
QUANTIZATION MEANS
113
VARIABLE LENGTH CODING MEANS
106
INVERSE QUANTIZATION MEANS
104
QUANTIZATION MEANS
107
INVERSE DCT CONVERSION MEANS
103
DCT CONVERSION MEANS
112
COMPRESSION FRAME BUFFER
114
COMPRESSION FRAME DATA COMBINATION MEANS
115
OUTPUT MEANS
108
FRAME MEMORY
102
MOTION COMPENSATION MEANS
109
REFERENCE INHIBITION AREA MEMORY MEANS
117
FRAME INPUT MEANS
116
INPUT MEANS

EP 0 507 205 B1

FIG. 4

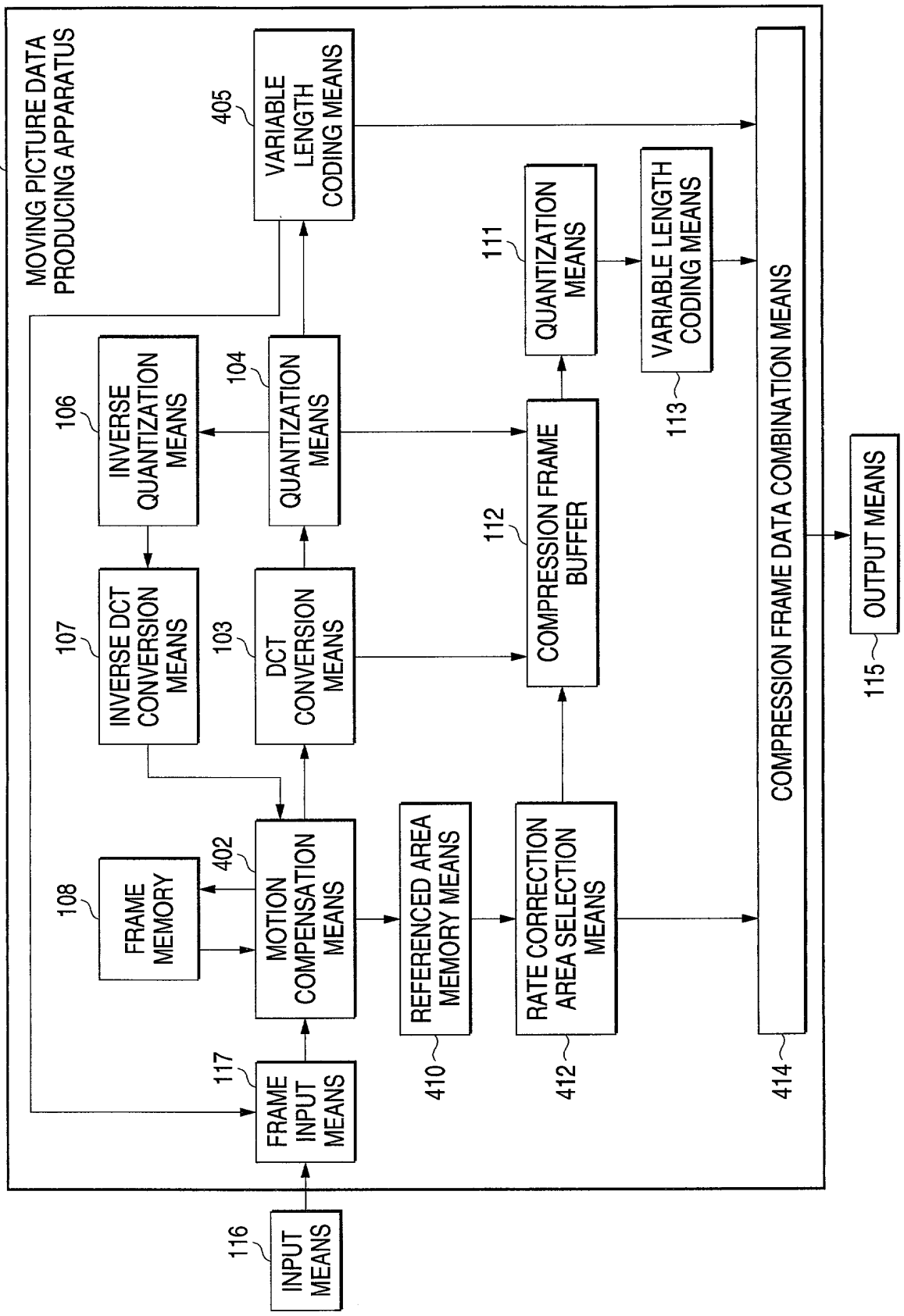


FIG. 5

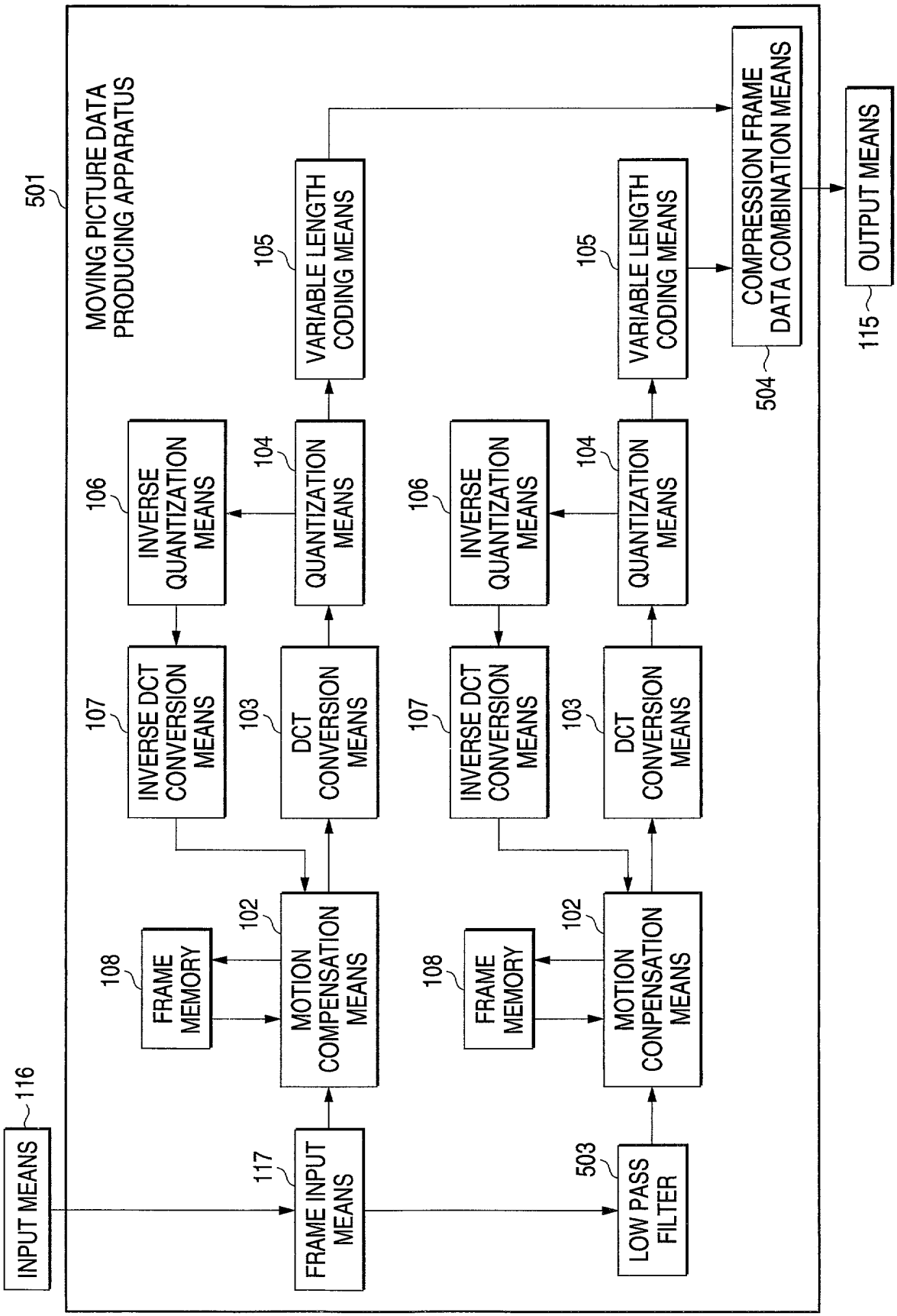

501
MOVING PICTURE DATA PRODUCING APPARATUS
116
INPUT MEANS
117
FRAME INPUT MEANS
503
LOW PASS FILTER
108
FRAME MEMORY
102
MOTION COMPENSATION MEANS
103
DCT CONVERSION MEANS
107
INVERSE DCT CONVERSION MEANS
106
INVERSE QUANTIZATION MEANS
104
QUANTIZATION MEANS
105
VARIABLE LENGTH CODING MEANS
504
COMPRESSION FRAME DATA COMBINATION MEANS
115
OUTPUT MEANS

FIG. 6

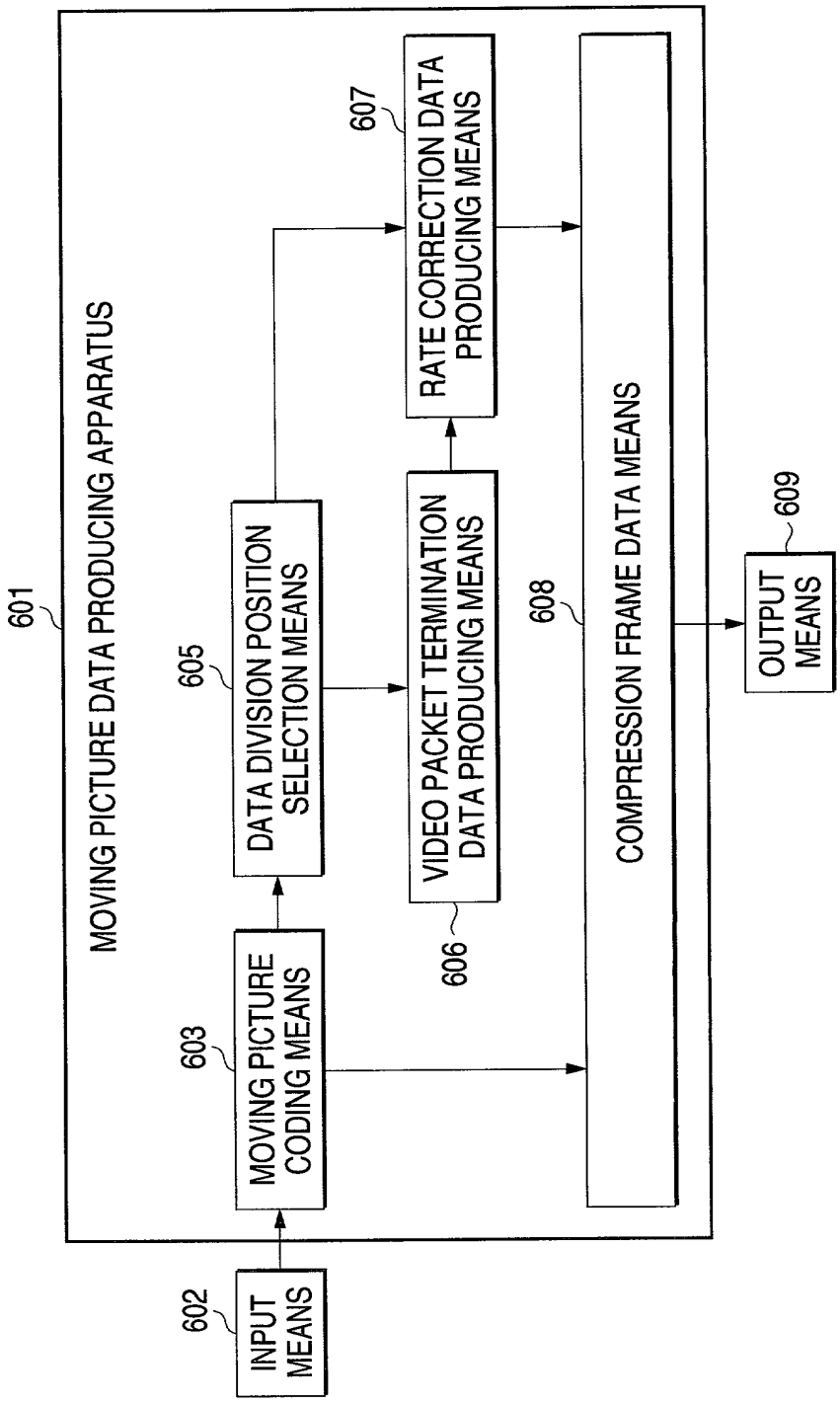

601
MOVING PICTURE DATA PRODUCING APPARATUS
602
INPUT MEANS
603
MOVING PICTURE CODING MEANS
605
DATA DIVISION POSITION SELECTION MEANS
606
VIDEO PACKET TERMINATION DATA PRODUCING MEANS
607
RATE CORRECTION DATA PRODUCING MEANS
608
COMPRESSION FRAME DATA MEANS
609
OUTPUT MEANS

FIG. 7

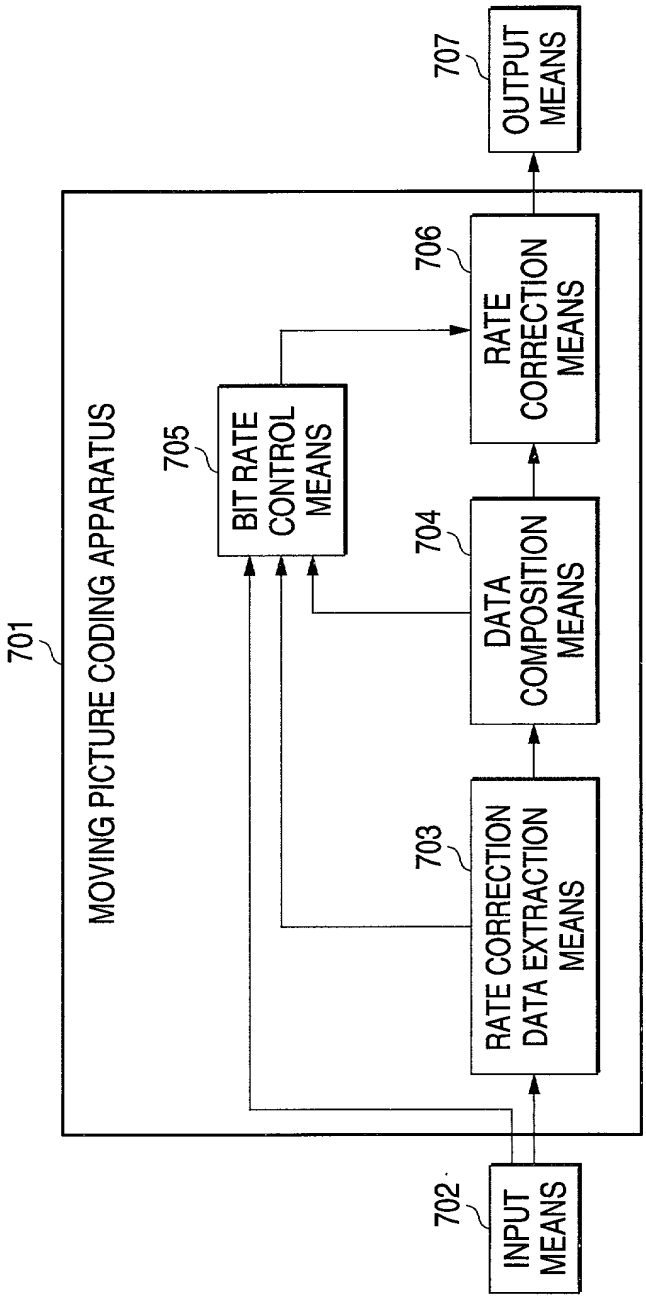

701
MOVING PICTURE CODING APPARATUS
702
INPUT MEANS
703
RATE CORRECTION DATA EXTRACTION MEANS
704
DATA COMPOSITION MEANS
705
BIT RATE CONTROL MEANS
706
RATE CORRECTION MEANS
707
OUTPUT MEANS

FIG. 8

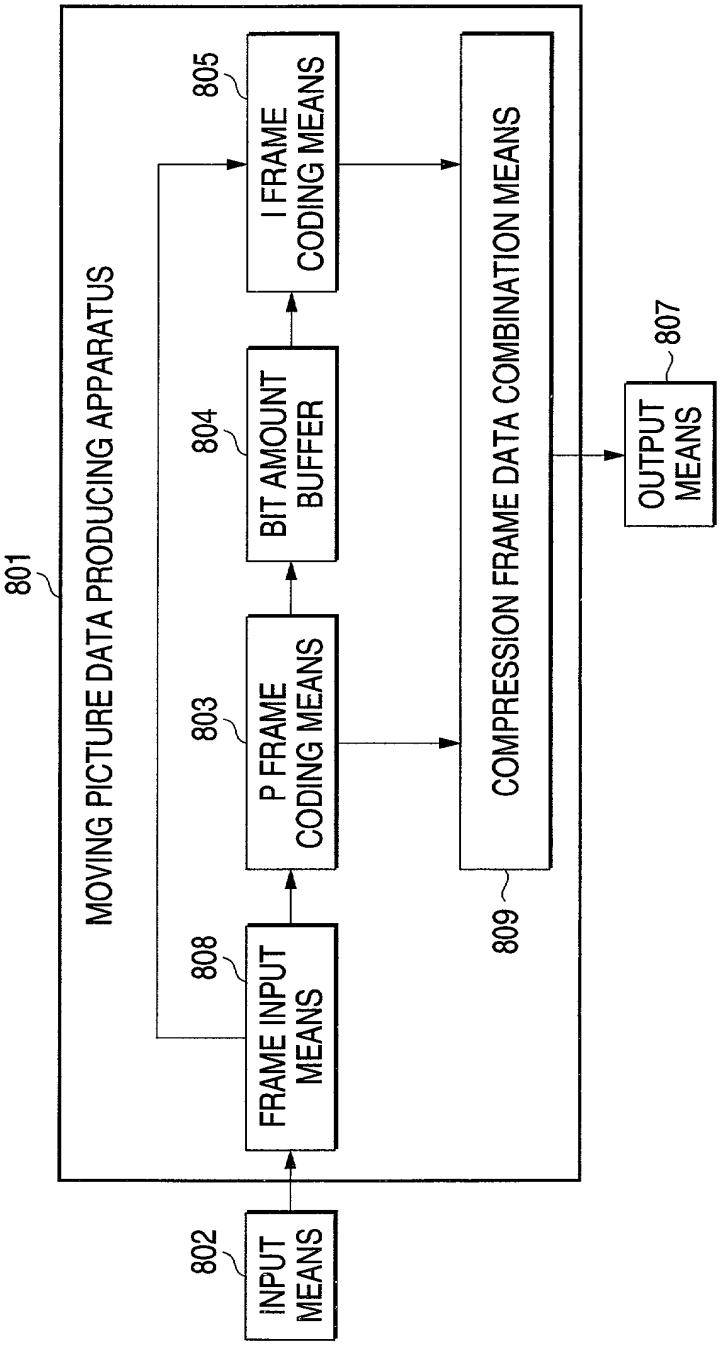

801
MOVING PICTURE DATA PRODUCING APPARATUS
802
INPUT MEANS
808
FRAME INPUT MEANS
803
P FRAME CODING MEANS
804
BIT AMOUNT BUFFER
805
I FRAME CODING MEANS
809
COMPRESSION FRAME DATA COMBINATION MEANS
807
OUTPUT MEANS

FIG. 9

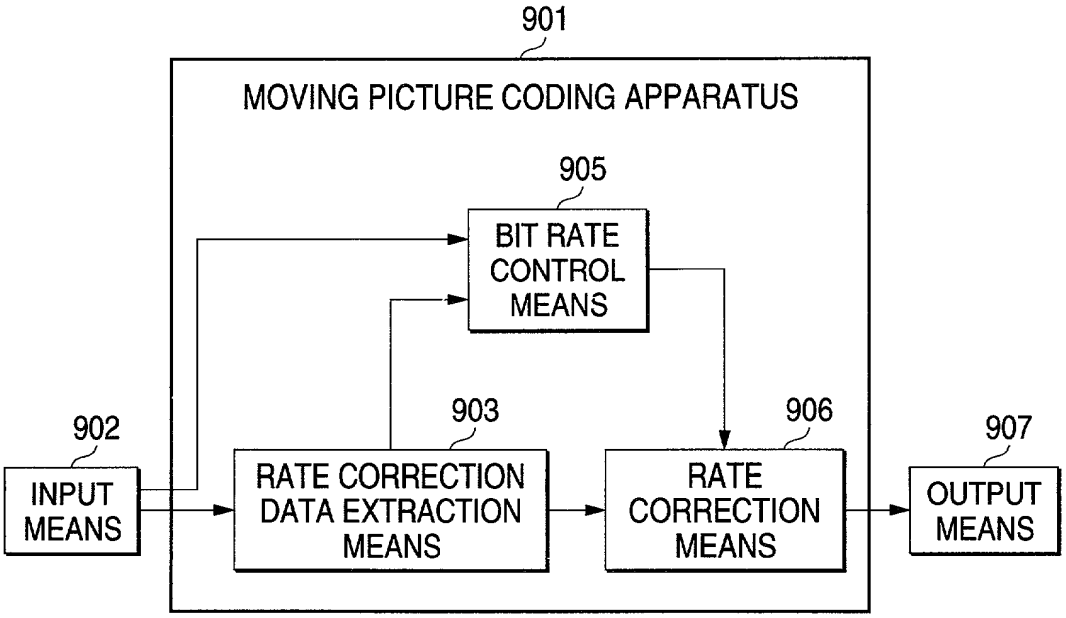

901
MOVING PICTURE CODING APPARATUS
905
BIT RATE CONTROL MEANS
902
INPUT MEANS
903
RATE CORRECTION DATA EXTRACTION MEANS
906
RATE CORRECTION MEANS
907
OUTPUT MEANS

FIG. 10

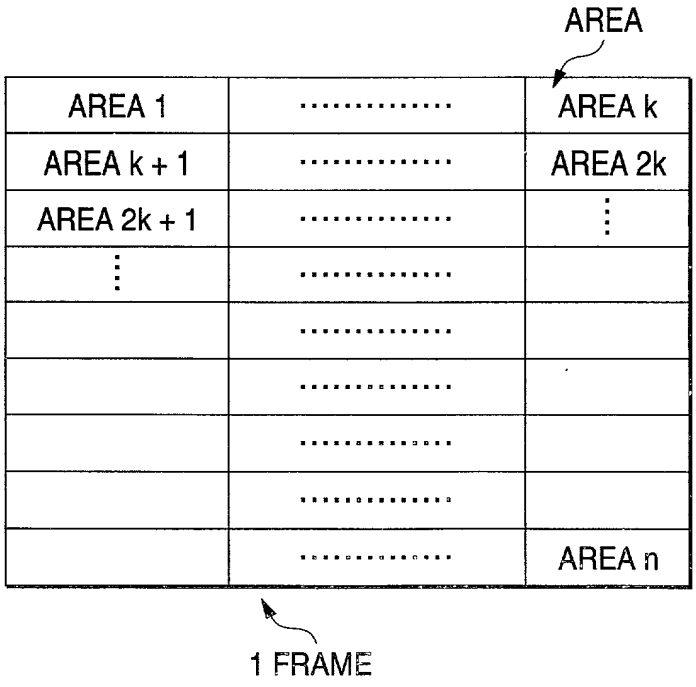

AREA
AREA 1
AREA k
AREA k + 1
AREA 2k
AREA 2k + 1
AREA n
1 FRAME

FIG. 11

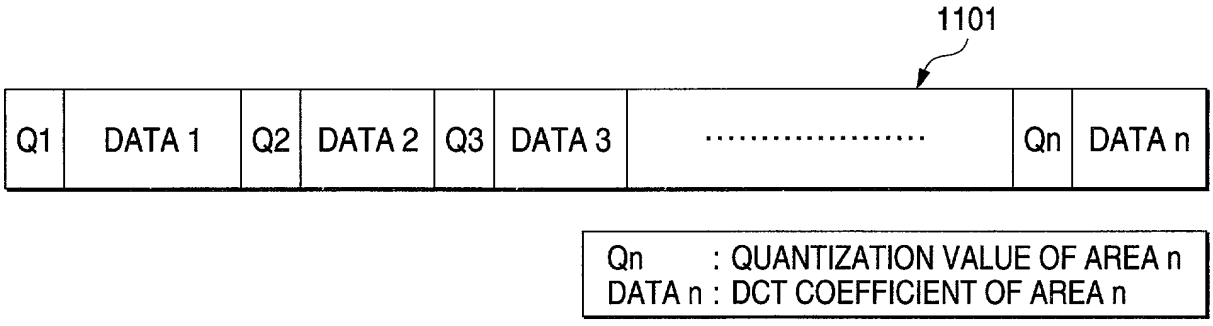

1101
Q1
DATA 1
Q2
DATA 2
Q3
DATA 3
Qn
DATA n
Qn : QUANTIZATION VALUE OF AREA n
DATA n : DCT COEFFICIENT OF AREA n

FIG. 12

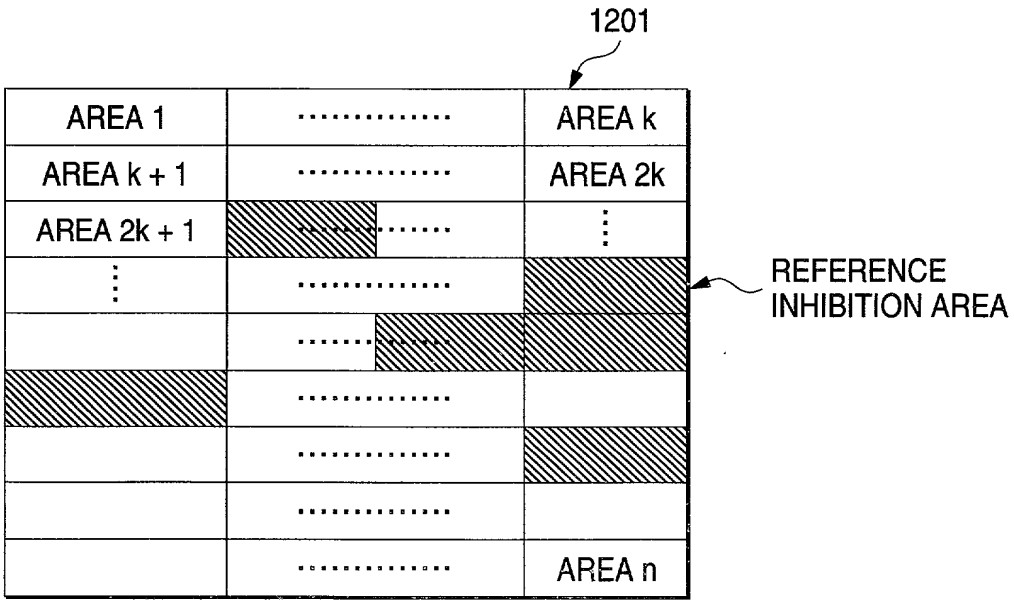

1201
AREA 1
AREA k
AREA k + 1
AREA 2k
AREA 2k + 1
REFERENCE INHIBITION AREA
AREA n

FIG. 13

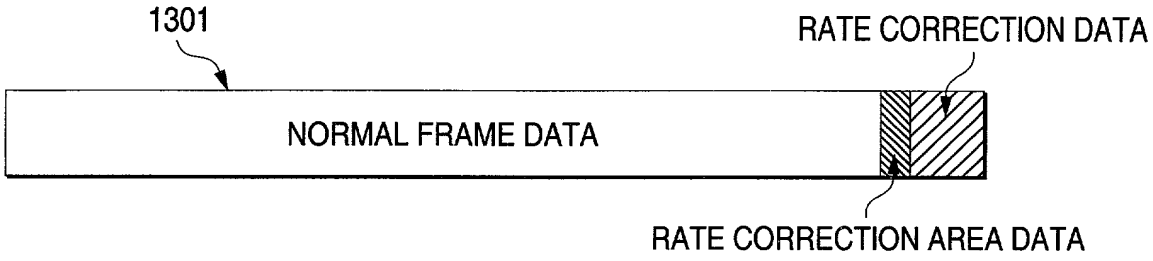


FIG. 14

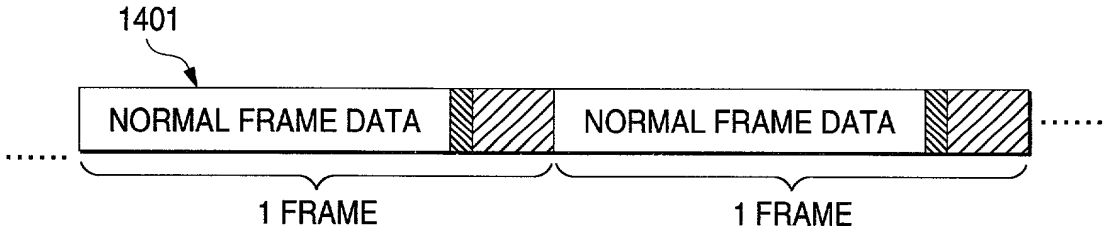


FIG. 15

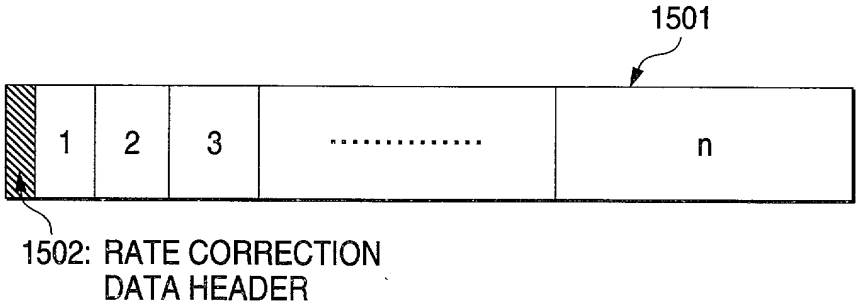


FIG. 16

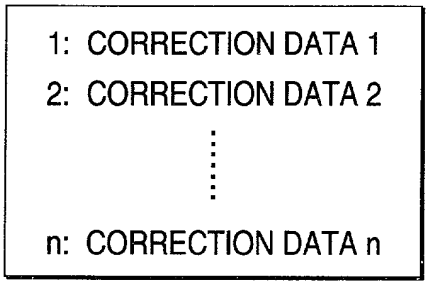


FIG. 17

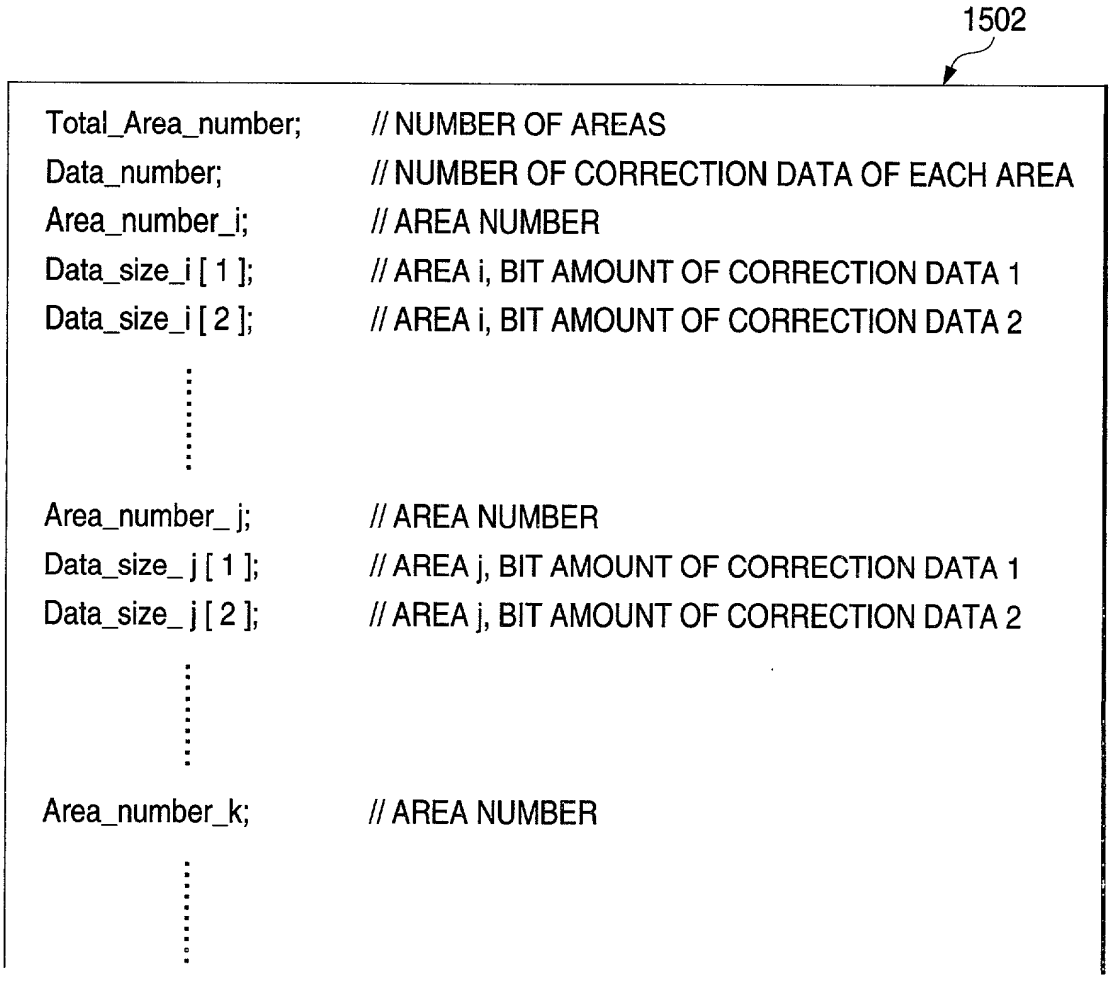


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FIG. 18

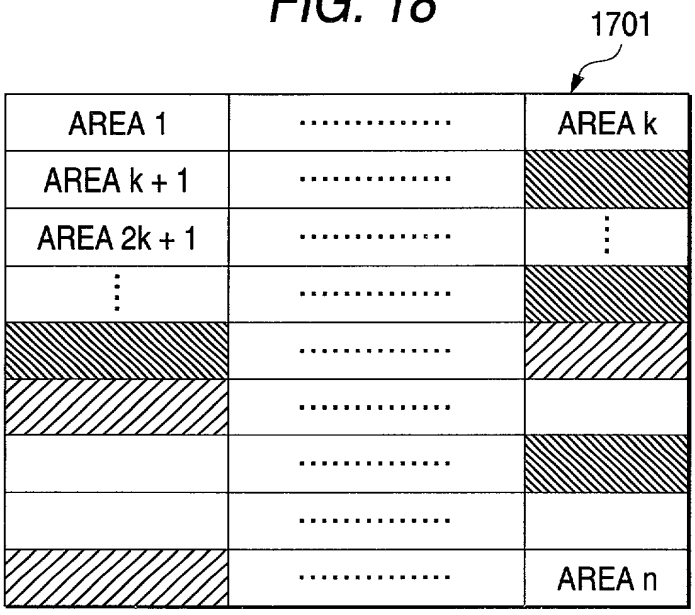


FIG. 19

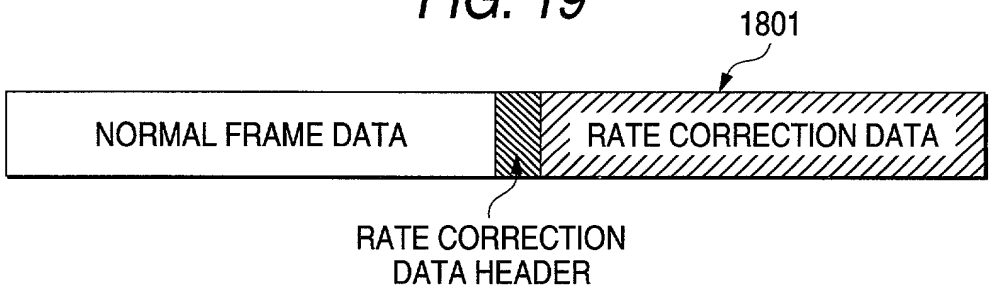


FIG. 20

1901

```
Total_area_number;      // NUMBER OF AREAS
Data_size [ 1 ];        // CORRECTION DATA BIT AMOUNT OF AREA 1
Data_size [ 2 ];        // CORRECTION DATA BIT AMOUNT OF AREA 2
        ⋮
Data_size [ n ];        // CORRECTION DATA BIT AMOUNT OF AREA n
```

FIG. 21

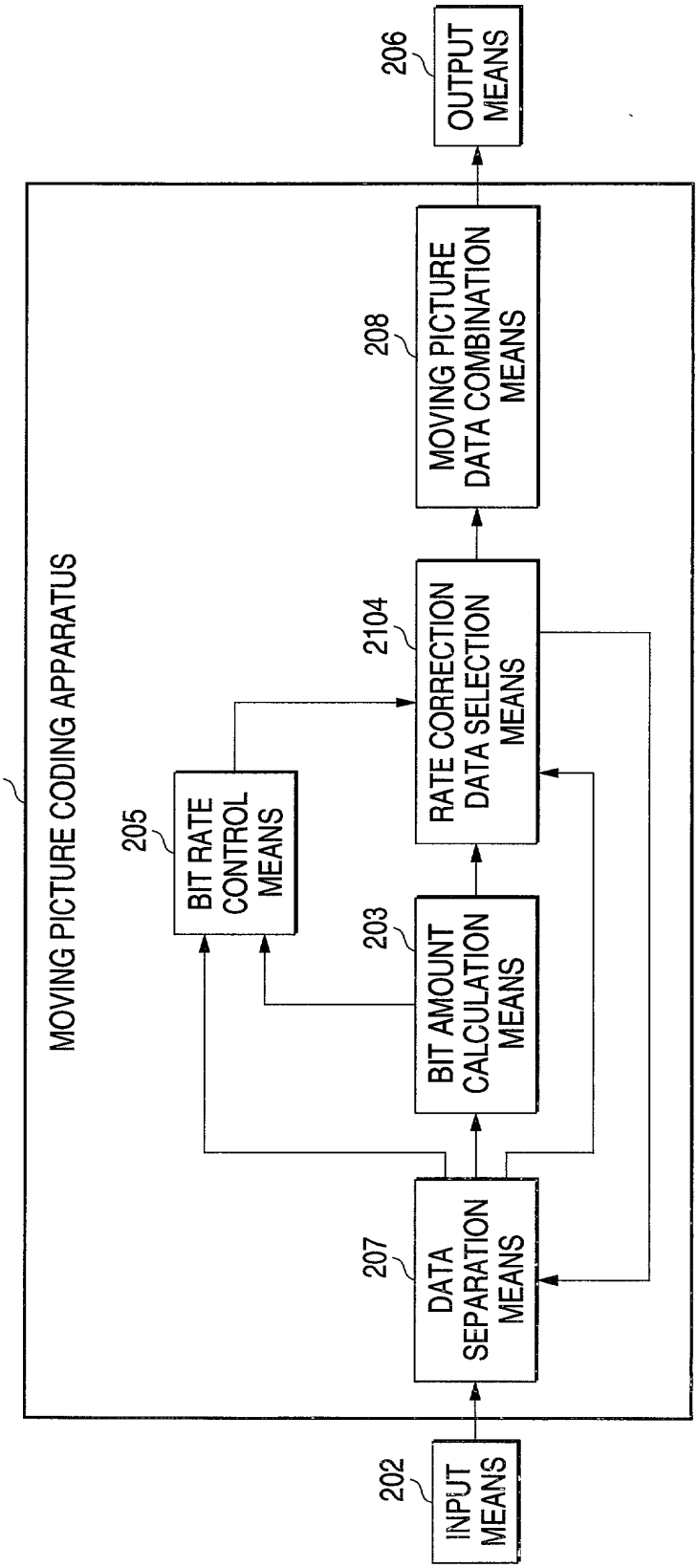

2101
MOVING PICTURE CODING APPARATUS
202
INPUT MEANS
207
DATA SEPARATION MEANS
203
BIT AMOUNT CALCULATION MEANS
205
BIT RATE CONTROL MEANS
2104
RATE CORRECTION DATA SELECTION MEANS
208
MOVING PICTURE DATA COMBINATION MEANS
206
OUTPUT MEANS

FIG. 22

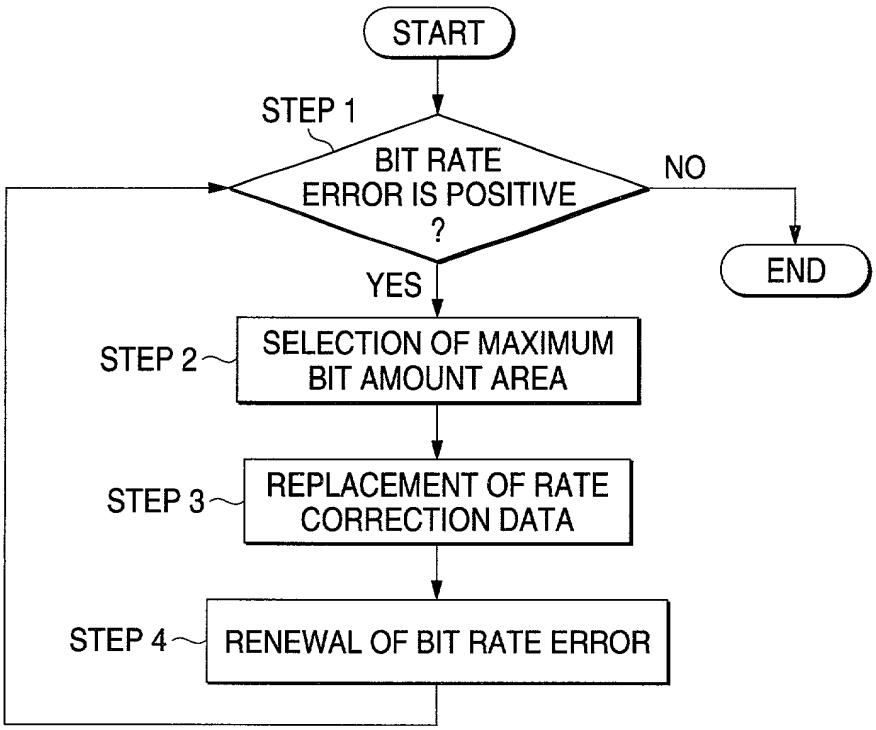

START
STEP 1
BIT RATE ERROR IS POSITIVE ?
NO
END
YES
STEP 2
SELECTION OF MAXIMUM BIT AMOUNT AREA
STEP 3
REPLACEMENT OF RATE CORRECTION DATA
STEP 4
RENEWAL OF BIT RATE ERROR

FIG. 23

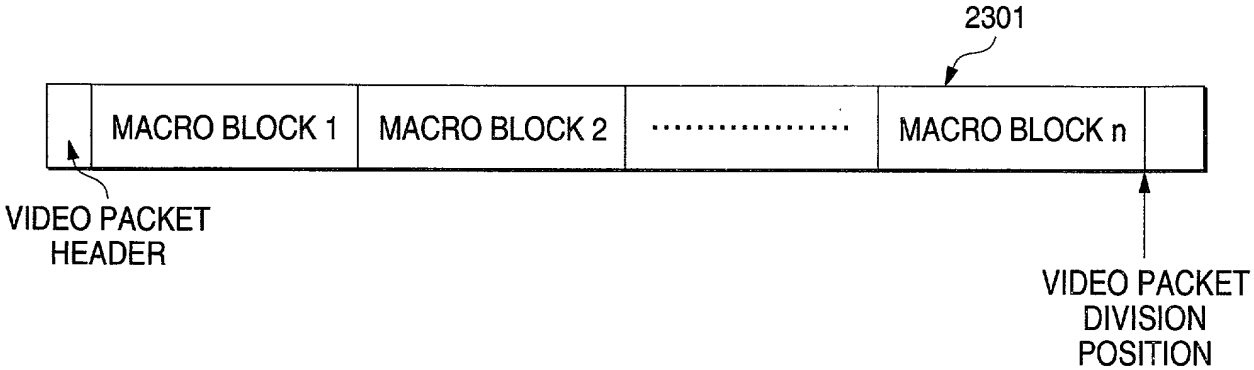

2301
MACRO BLOCK 1
MACRO BLOCK 2
MACRO BLOCK n
VIDEO PACKET HEADER
VIDEO PACKET DIVISION POSITION

FIG. 24

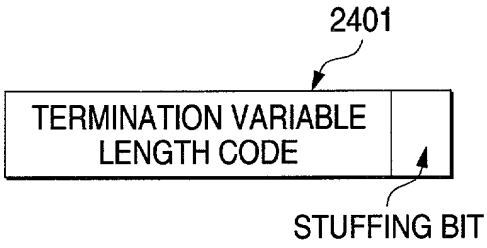


FIG. 25

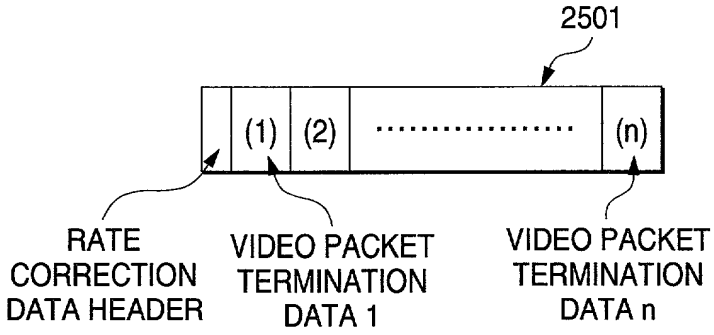


FIG. 26

2502

```
Total_Vpacket_number;   // TOTAL VIDEO PACKET NUMBER
CutPosition [ i ];      // DIVISION POSITION OF VIDEO PACKET ( i )
Cut_Bit_Number [ i ];   // BIT AMOUNT WHICH CAN BE DELETED, OF VIDEO PACKET ( i )
End_Bit_Number [ i ];   // TERMINATION DATA BIT AMOUNT OF VIDEO PACKET ( i )
        ⋮
CutPosition [n];        // DIVISION POSITION OF VIDEO PACKET (n)
Cut_Bit_Number [n];     // BIT AMOUNT WHICH CAN BE DELETED, OF VIDEO PACKET (n)
End_Bit_Number [n];     // TERMINATION DATA BIT AMOUNT OF VIDEO PACKET (n)
```

FIG. 27

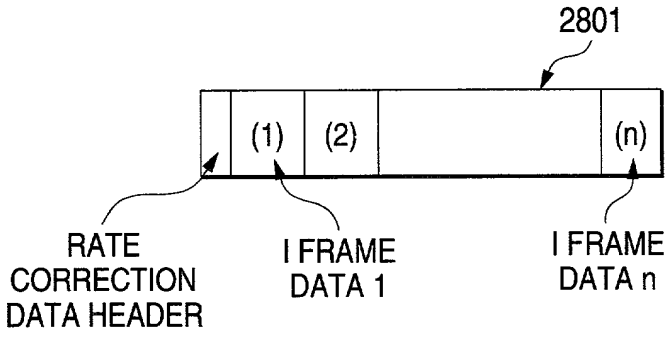


FIG. 28

2802

```
Total_Iframe_number;     // TOTAL I FRAME NUMBER
Bit_Number [ i ];        // BIT AMOUNT OF I FRAME ( i )
        .
        .
        .
Bit_Number [n];          // BIT AMOUNT OF I FRAME (n)
```

FIG. 29

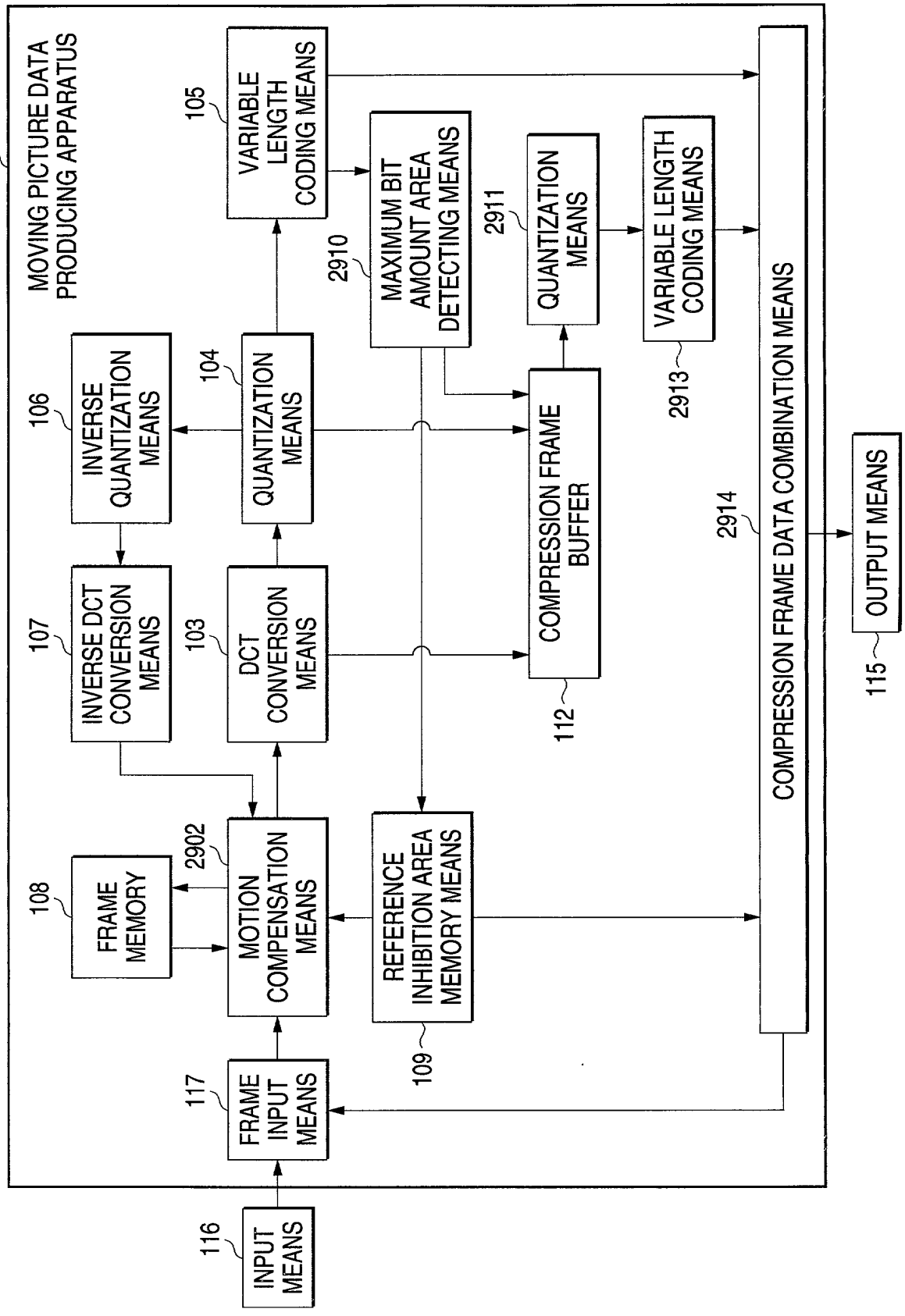

2901
MOVING PICTURE DATA PRODUCING APPARATUS
105
VARIABLE LENGTH CODING MEANS
2910
MAXIMUM BIT AMOUNT AREA DETECTING MEANS
2911
QUANTIZATION MEANS
2913
VARIABLE LENGTH CODING MEANS
106
INVERSE QUANTIZATION MEANS
104
QUANTIZATION MEANS
107
INVERSE DCT CONVERSION MEANS
103
DCT CONVERSION MEANS
112
COMPRESSION FRAME BUFFER
2914
COMPRESSION FRAME DATA COMBINATION MEANS
115
OUTPUT MEANS
108
FRAME MEMORY
2902
MOTION COMPENSATION MEANS
109
REFERENCE INHIBITION AREA MEMORY MEANS
117
FRAME INPUT MEANS
116
INPUT MEANS

FIG. 30

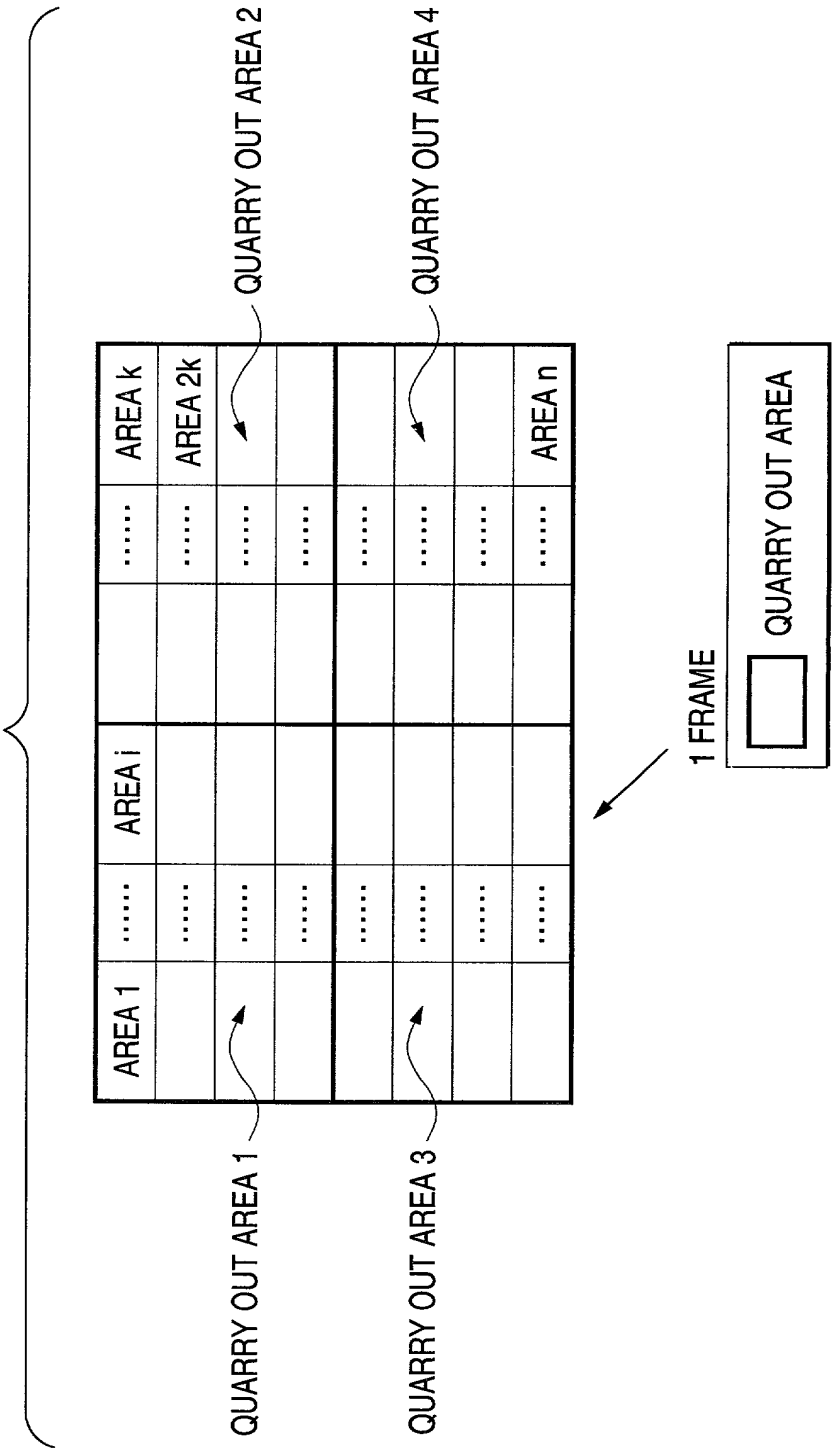

AREA 1
AREA i
AREA k
AREA 2k
AREA n
QUARRY OUT AREA 1
QUARRY OUT AREA 2
QUARRY OUT AREA 3
QUARRY OUT AREA 4
1 FRAME
QUARRY OUT AREA

FIG. 31

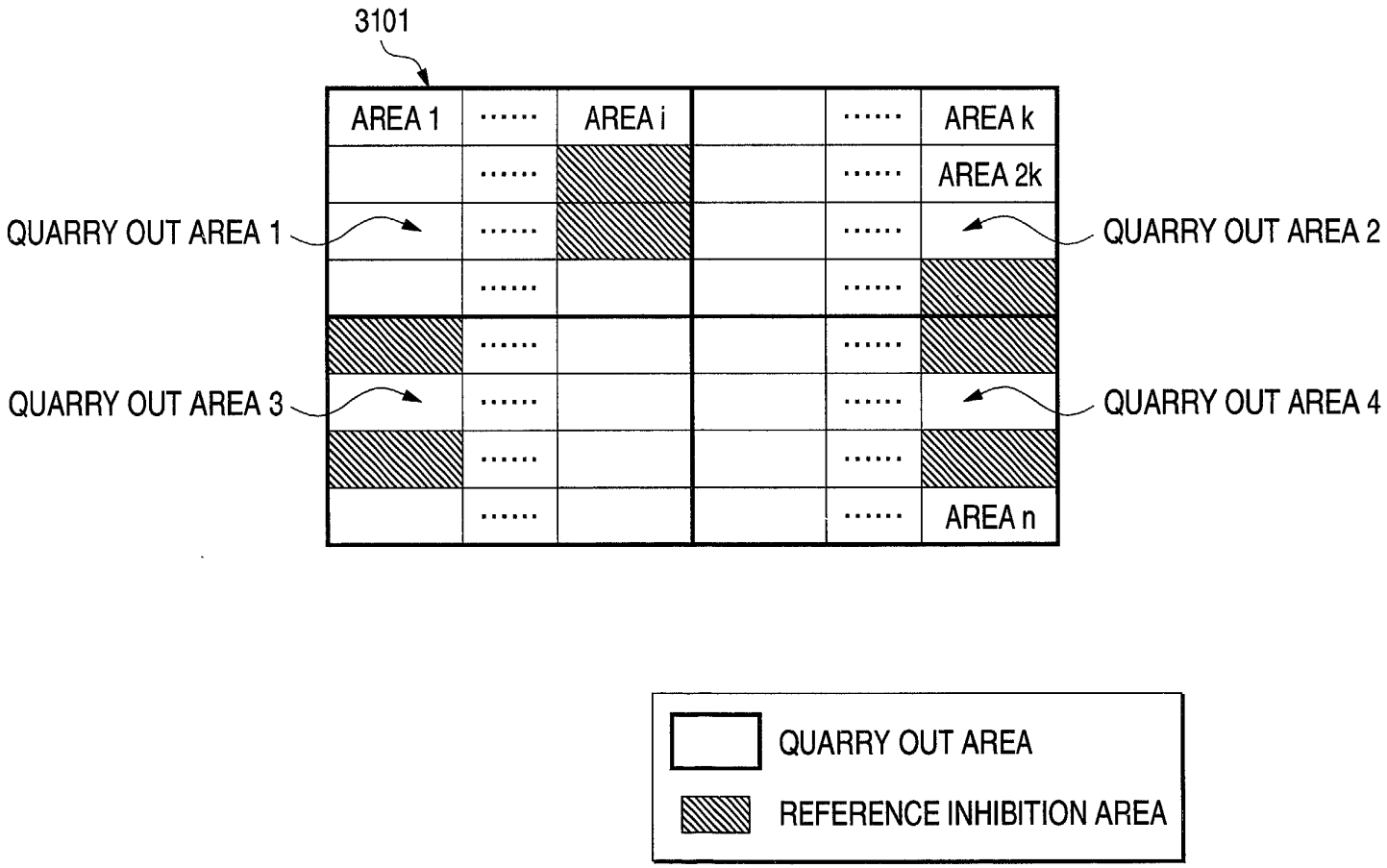

3101
AREA 1
AREA i
AREA k
AREA 2k
AREA n
QUARRY OUT AREA 1
QUARRY OUT AREA 2
QUARRY OUT AREA 3
QUARRY OUT AREA 4
QUARRY OUT AREA
REFERENCE INHIBITION AREA

FIG. 32

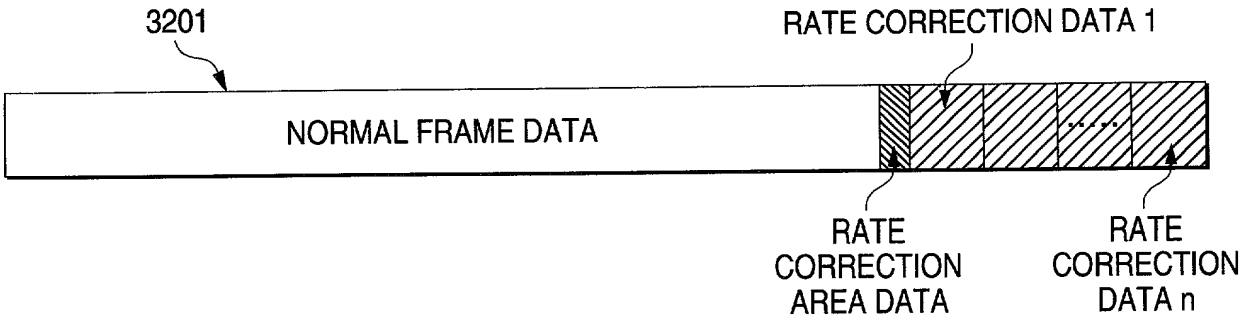

3201
RATE CORRECTION DATA 1
NORMAL FRAME DATA
RATE CORRECTION AREA DATA
RATE CORRECTION DATA n

FIG. 33

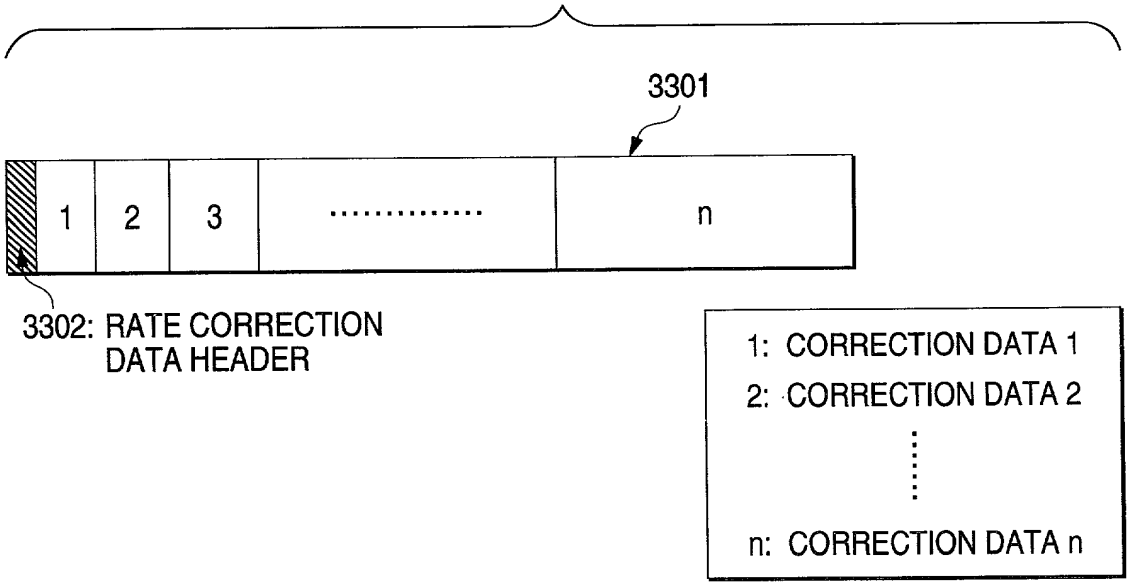

3301
1
2
3
n
3302: RATE CORRECTION DATA HEADER
1: CORRECTION DATA 1
2: CORRECTION DATA 2
n: CORRECTION DATA n

FIG. 34

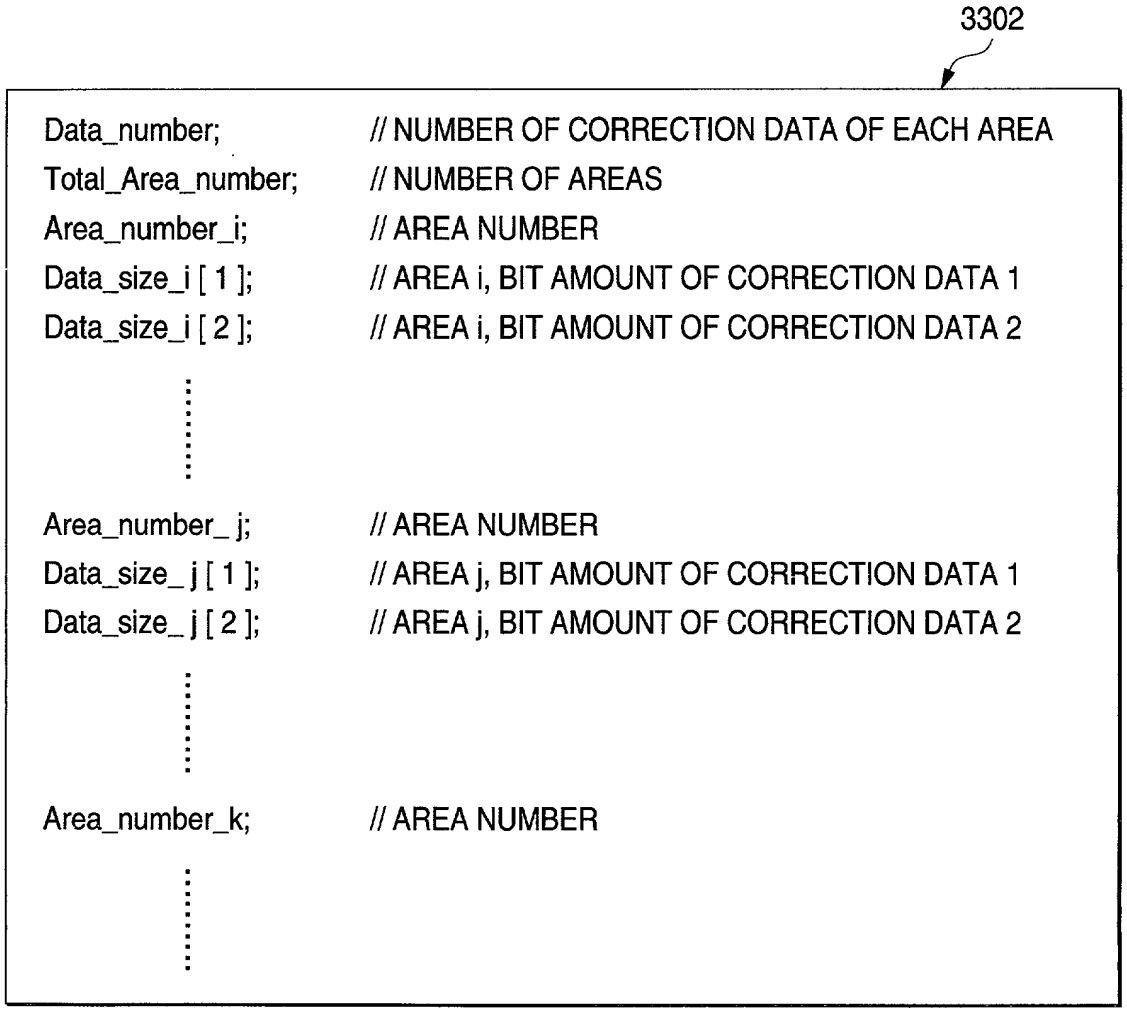

3302
Data_number; // NUMBER OF CORRECTION DATA OF EACH AREA
Total_Area_number; // NUMBER OF AREAS
Area_number_i; // AREA NUMBER
Data_size_i [1]; // AREA i, BIT AMOUNT OF CORRECTION DATA 1
Data_size_i [2]; // AREA i, BIT AMOUNT OF CORRECTION DATA 2
Area_number_ j; // AREA NUMBER
Data_size_ j [1]; // AREA j, BIT AMOUNT OF CORRECTION DATA 1
Data_size_ j [2]; // AREA j, BIT AMOUNT OF CORRECTION DATA 2
Area_number_k; // AREA NUMBER

FIG. 35

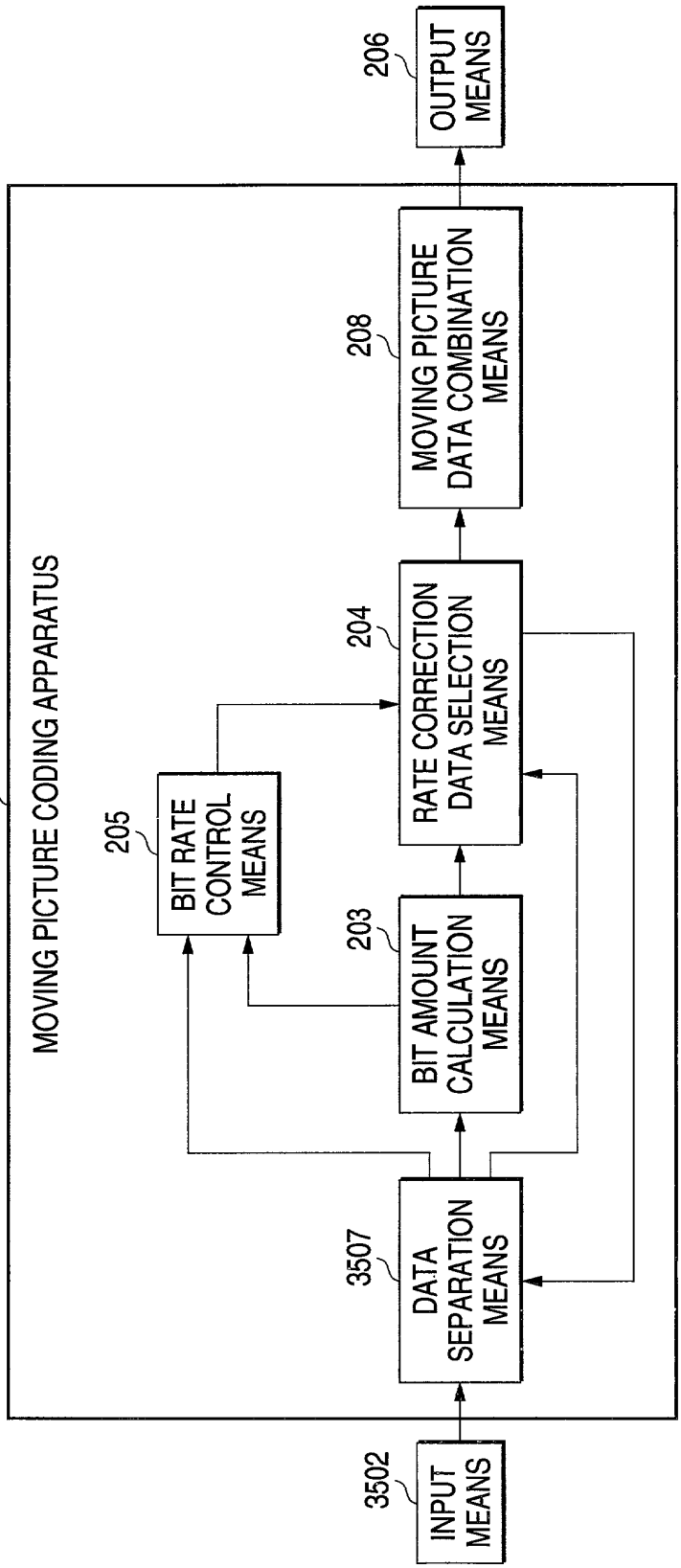

3501
MOVING PICTURE CODING APPARATUS
3502
INPUT MEANS
3507
DATA SEPARATION MEANS
203
BIT AMOUNT CALCULATION MEANS
205
BIT RATE CONTROL MEANS
204
RATE CORRECTION DATA SELECTION MEANS
208
MOVING PICTURE DATA COMBINATION MEANS
206
OUTPUT MEANS

FIG. 36

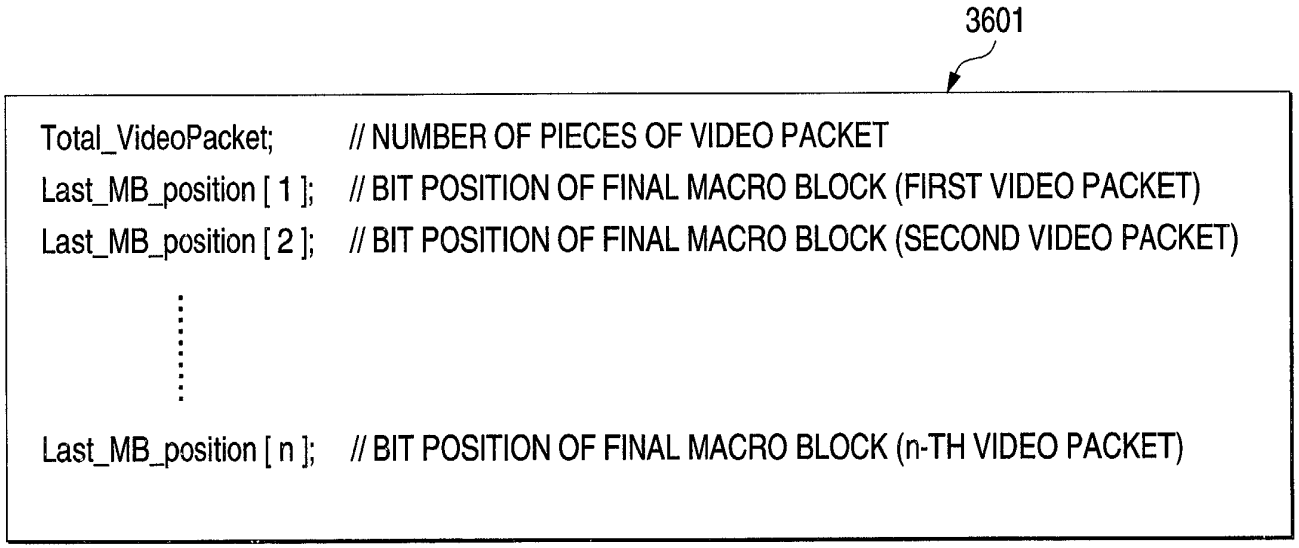

3601
Total_VideoPacket; // NUMBER OF PIECES OF VIDEO PACKET
Last_MB_position [1]; // BIT POSITION OF FINAL MACRO BLOCK (FIRST VIDEO PACKET)
Last_MB_position [2]; // BIT POSITION OF FINAL MACRO BLOCK (SECOND VIDEO PACKET)
Last_MB_position [n]; // BIT POSITION OF FINAL MACRO BLOCK (n-TH VIDEO PACKET)

FIG. 37

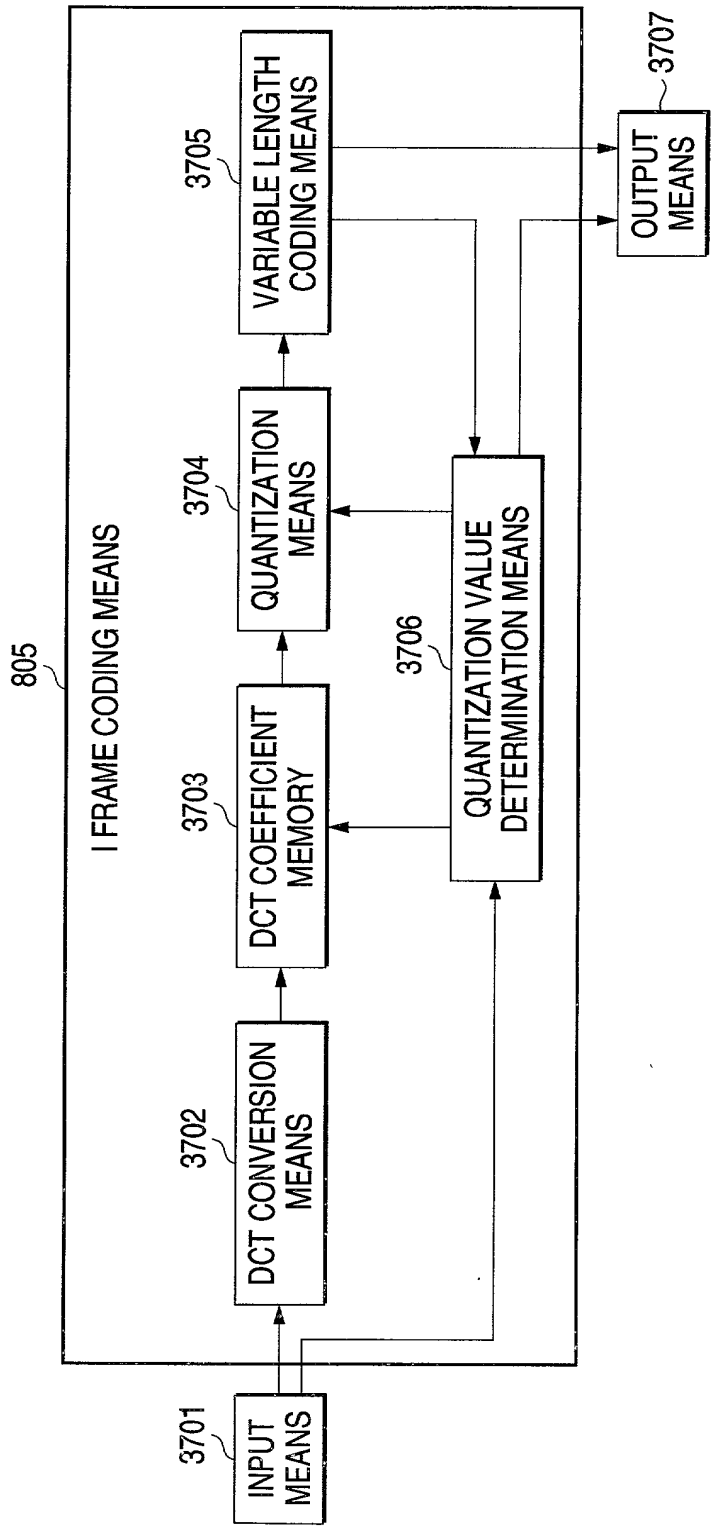
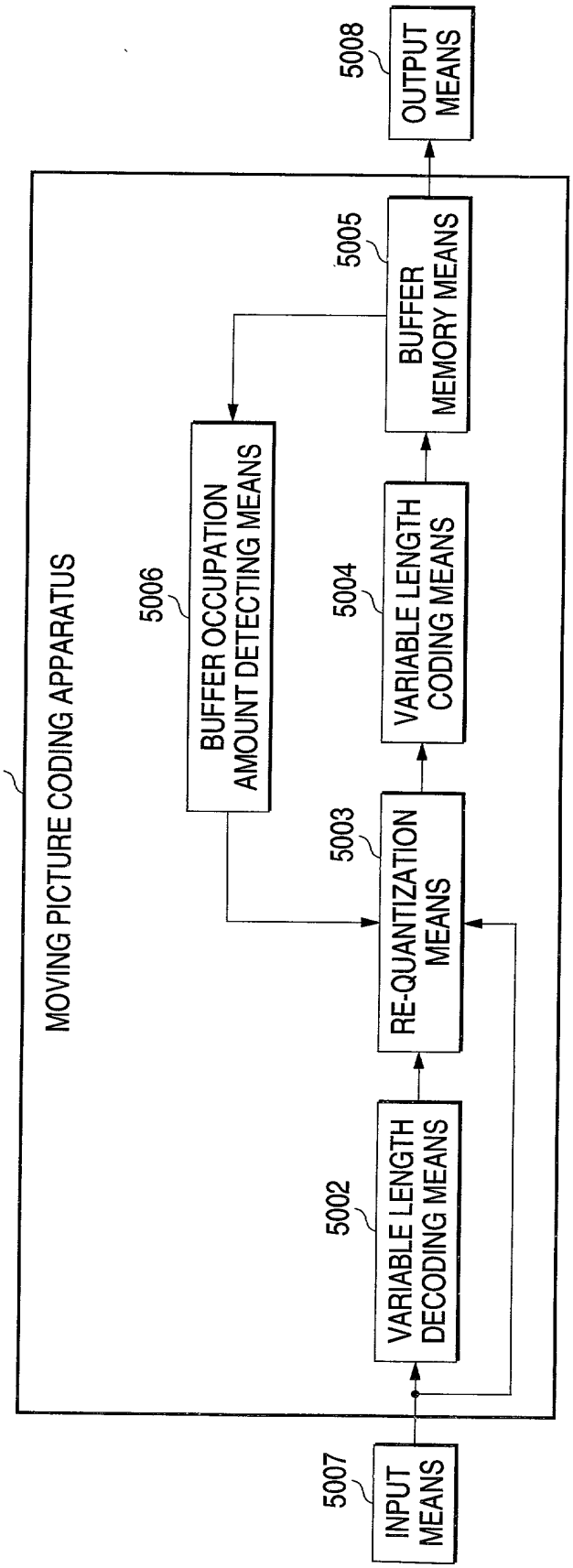

805
I FRAME CODING MEANS
3701
INPUT MEANS
3702
DCT CONVERSION MEANS
3703
DCT COEFFICIENT MEMORY
3704
QUANTIZATION MEANS
3705
VARIABLE LENGTH CODING MEANS
3706
QUANTIZATION VALUE DETERMINATION MEANS
3707
OUTPUT MEANS

FIG. 38


5001
MOVING PICTURE CODING APPARATUS
5002
VARIABLE LENGTH DECODING MEANS
5003
RE-QUANTIZATION MEANS
5004
VARIABLE LENGTH CODING MEANS
5005
BUFFER MEMORY MEANS
5006
BUFFER OCCUPATION AMOUNT DETECTING MEANS
5007
INPUT MEANS
5008
OUTPUT MEANS